

1. An apparatus for testing a sample of biologic fluid quiescently residing within a chamber, said apparatus comprising:
5 a field illuminator for selectively illuminating a field of the sample, said field having a known or ascertainable area;

a positioner, which is operable to selectively change the position of one of the chamber or said field illuminator relative to the other of the chamber or said field illuminator, thereby permitting selective illumination of a plurality of said sample fields within the chamber;

10 means for determining one of a through-plane thickness or a volume of each said sample field; and

an image dissector, for converting an image of light passing through or emanating from each said field of the sample into an electronic data format useful for test purposes.

15 2. An apparatus according to claim 1, further comprising means for retrieving information concerning the chamber which information is used in the performance of one or more tests on the biologic fluid sample by said apparatus.

3. An apparatus according to claim 2, wherein said means for retrieving information
20 includes a label reader for reading a label relating to the chamber.

4. An apparatus according to claim 3, wherein said label reader optically reads labels.

5. An apparatus according to claim 3, wherein said label reader magnetically reads labels.

25 6. An apparatus according to claim 3, further comprising:

5 a programmable analyzer having a central processing unit;

10 wherein said label reader transfers said information to said programmable analyzer, and said programmable analyzer interprets said information, identifying said one or more tests to be performed on the biologic fluid sample.

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7. An apparatus according to claim 6, wherein said programmable analyzer contains a plurality of instructions for performing said one or more tests.

10 8. An apparatus according to claim 7, wherein said plurality of instructions are contained remote from said programmable analyzer and are accessed through said programmable analyzer.

15 9. An apparatus according to claim 7, wherein said plurality of instructions includes means for controlling said field illuminator and said positioner.

10 10. An apparatus according to claim 9, wherein said positioner includes means for spatially locating said chamber relative to said field illuminator;

20 wherein said means for spatially locating said chamber relative to said field illuminator enables said field illuminator to be aligned with any particular spatial location within said chamber.

11. An apparatus according to claim 10, wherein a coordinate address is used to describe particular spatial locations within said chamber.

25 12. An apparatus according to claim 11, wherein said information retrieved by said label reader relates to features within the chamber.

13. An apparatus according to claim 1, wherein said field illuminator comprises:
a light source which produces light within a wavelength range broad enough to be
useful for a plurality of tests on the biologic fluid sample; and
an assembly of objective optics, wherein said optics direct light emanating from said
5 sample field or transmitted through said sample field into a known or ascertainable area image
of light on said image dissector.

14. An apparatus according to claim 13, wherein said assembly of objective optics
comprises:

10 an objective lens;
a focusing mechanism, said mechanism for selectively adjusting the position of said
objective lens relative to the chamber; and
a light filter for blocking or passing certain wavelengths of said light;
wherein other wavelengths of said light emanating from said light source pass through
15 said objective lens and said light filter and into said image dissector, or are blocked,
respectively.

15. An apparatus according to claim 14, wherein said field illuminator directs light into said
sample within the chamber and collects light fluorescing out of said sample.

20 16. An apparatus according to claim 15, wherein said light filter comprises:
a plurality of light source excitation filters;
a plurality of sample emission filters;
wherein said light source excitation filters block selected wavelengths of said light
25 emanating from said light source and said sample emission filters block selected wavelengths of
said light fluorescing out of said sample.